

SOV/165-59-6-2/5-15

Study of the Glow of the Night Sky and Aurora Borealis Over Ashkhabad During the International Geophysical Year

Graph 1; Curve 1 shows the 6296 exposure 15 seconds, and Curve 2 the 5401 exposure 4 minutes. Calculations of line intensity in relation to line 5577 is given in Table 1. The intensity of the spectral lines of night sky glow $\lambda \lambda$ 6300 and 6354 Å in relation to the intensity of green line 5577 Å during the International Geophysical Year is given on Graph 2. Data on night sky glow observed on September 4 - 5 and 29 - 30, 1957, are given in Table 2.

There are 2 graphs, 2 tables and 2 Soviet references.

ASSOCIATION: Institut fiziki i geofiziki AN Turkmenskoy SSR (Institute of Physics and Geophysics AS Turkmenskaya SSR)

COMPLETED: February 28, 1958

Card 2/2

GENKIN, I.L.

"Extragalactic astronomy" by M.S.Eigenson. Reviewed by I.L.Genkin.
Astron.zhur. 38 no.5:1003-1004 S-O '61. (MIRA 14:9)
(Astronomy)
(Eigenson, M.S.)

GENKIN, I.L.

The K effect and the spiral structure of the Galaxy. Astron.zhur.
39 no.1:15-21 Ja-F '62. (MIRA 15:2)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shternberga.
(Milky way)
(Radio astronomy)

ACCESSION NR: AT4038539

S/2623/62/000/118/0046/0058

AUTHOR: Genkin, I. L.

TITLE: Criteria of metagalactic distances

SOURCE: Moscow. Univ. Gos. astron. Inst. Soobshch., no. 118, 1962, 46-58

TOPIC TAGS: astrophysics, astronomy, galaxy, metagalaxy, metagalactic distance, Magellanic Cloud, Hubble constant, cepheid, variable star, nova

ABSTRACT: The most convenient objects to use in determination of metagalactic distances are the Magellanic Clouds, whose distances can be determined with great accuracy. The purpose of this paper is to determine more precisely the zero point of the period-luminosity relation and obtain more precise values for other criteria of metagalactic distances. Three methods for determining distance to the Magellanic Clouds are reviewed: using cepheids, using stars of the type RR Lyrae and using novae. There is a brief discussion of the nine criteria used in determining metagalactic distances: absolute magnitude of stars of the type RR Lyrae; correction to the Shapley zero point (1930); absolute magnitude of novae at the brightness maximum; absolute magnitude of novae 15 days after the maximum; the relationship between M_0 and t_3 ; absolute magnitude of blue supergiants; integral absolute stellar magnitude of globular clusters; mean absolute magnitude of 25

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ACCESSION NR: AT4038539

stars of a globular cluster from the 6th to the 30th brightest stars; and absolute magnitude of the 6th brightest star of a globular cluster. Using these criteria the author determines distance to the galaxy M31 and clusters of galaxies in Deva. The value of the Hubble constant is found to be $H = 120 \pm 20$ km/sec-Mpc, but it is noted that this constant was determined solely on the basis of one cluster of galaxies and further confirmation is essential. "The author wishes to thank B. A. Vorontsov-Vel'yaminov for valuable suggestions and advice and Yu. P. Pskovskiy for certain comments and general discussion of the results." Orig. art. has: 16 formulas and 3 tables.

ASSOCIATION: Gosudarstvennyy astronomicheskiy institut, Moscow (State Astronomical Institute)

SUBMITTED: 00Mar61

DATE ACQ: 18Jun64

ENCL: 00

SUB CODE: AA

NO REF SOV: 007

OTHER: 033

Cord 2/2

S/269/63/000/002/009/037
A001/A101

AUTHOR: Genkin, I. I.

TITLE: Dynamics of stellar systems with Schwarzschild distribution of velocities of stars

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 2, 1963, 43, abstract 2.51.357 ("Soobshch. Gos. astron. in-t im. P. K. Shternberga", 1962, no. 124, 3 - 27)

TEXT: The author considers stationary systems with Schwarzschild distribution of stellar velocities. The continuity equation can be used to find a condition for the potential in order to ensure the existence of the Kuz'min third integral of motion. Generalized expressions for the gradients of density logarithms are presented and discussed. For the case of spherically symmetric systems an equation (derived by Eddington) is investigated:

$$\frac{1}{r^2} \frac{d}{dr} \left(r^2 \frac{d\Phi}{dr} \right) = - \frac{\text{const}}{c_1 + c_2 r^2} e^{2c_1 \Phi},$$

where r is distance from the system center, Φ is potential, c_1 and c_2 are con-
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S/269/63/000/002/009/037
A001/A101

Dynamics of stellar systems with...

stants. At $r \rightarrow \infty$ density ρ in such systems varies according to the law $\rho \sim 1/r^2 \ln r$. The corresponding equation for systems with rotational symmetry is qualitatively investigated. Non-stationary systems with rotational symmetry are considered; their function of velocity distribution is a generalized Schwarzschild function. Conditions are determined which are imposed on the coefficients of velocity ellipsoid and on potential. The following expression has been obtained

$$\Phi = \frac{c_6 - 1}{c_5} \varphi_1 \ddot{\varphi}_1 (\xi_1^2 + \xi_2^2) + \frac{1}{\varphi_1^2} \frac{q_1(\xi_1) - q_2(\xi_2)}{\xi_1^2 - \xi_2^2} + T_2(t),$$

which generalizes the expression derived by Kuz'min for a stationary galaxy. Here φ_1 and $T_2(t)$ are functions of time, ξ_1 and ξ_2 are extended spheroidal dimensionless coordinates, $q_1(\xi_1)$ and $q_2(\xi_2)$ are arbitrary functions, c_5 and c_6 are constants, and $\ddot{\varphi}_1 = d^2\varphi_1/dt^2$ (t is time). There are 10 references.

B. Fesenko

[Abstracter's note: Complete translation]

Card 2/2

GENKIN, I.L.

The ~~K~~-effect in galaxy M 31. Astron.zhur. 39 no.6:1044-1049
N-D '62. (MIRA 14:11)

1. Gosudarstvennyy astronomicheskiy institut im.
P.K. Shternberga.

(Galaxies)

GENKIN, I.L.

Dynamics of stellar systems with Schwarzschild's distribution of stellar velocities. Soob.GAISH no.129:3-39 '66. (MIRA 17:2)

S/033/63/040/002/015/021
E001/E120

AUTHOR: Genkin, I.L.

TITLE: The dynamics of a nonsteady state galaxy

PERIODICAL: Astronomicheskiy zhurnal, v.40, no.2, 1963, 312-317

TEXT: A satisfactory explanation of triaxiality of the velocity ellipsoid in the dynamics of a steady state galaxy was furnished by the theory of G.G. Kuzmin (Publ. Tartuskoy astronom. observ., v.32, no.5, 1953, 332) of the third integral in the motion of stars. The present article is aimed at deriving analogous results in the dynamics of a nonsteady state galaxy. Using the Jeans theorem that the phase density is an integral of motion and assuming the distribution function to be a generalized Schwarzschild function, the author derives the following equation for the Stokes derivative of the integral of motion $(Q + \sigma)$ in a nonsteady system with rotational symmetry:

$$\frac{\partial}{\partial t} + \Pi \frac{\partial}{\partial R} + z \frac{\partial}{\partial z} + \frac{\Theta^2}{R} \frac{\partial}{\partial \Pi} - \frac{\Pi \Theta}{R} \frac{\partial}{\partial \Theta} + \frac{\partial \Phi}{\partial R} \frac{\partial}{\partial \Pi} + \frac{\partial \Phi}{\partial z} \frac{\partial}{\partial z} (Q + \sigma) = 0 \quad (4)$$

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The dynamics of a nonsteady state ... S/033/63/040/002/015/021
E001/E120

where designations used are those occurring in Chandrasekhar's "Principles of Stellar Dynamics", Russian translation, IL, 1948. This equation leads to 20 differential equations in partial derivatives from which Π_0 , Φ_0 and Z_0 can be determined.

It follows from the analysis of the solution that the velocity ellipsoid is inclined to the galactic plane everywhere beyond the rotational axis and the galactic plane itself. The following expressions are derived for the potential:

$$\Phi = \frac{1}{\varphi_1} \frac{q_1(\xi_1^2) - q_2(\xi_2^2)}{\xi_1^2 - \xi_2^2} + \frac{p_2}{\varphi_1} \quad (38)$$

and for the velocity components of centroids:

$$\Pi_0 = \frac{\dot{\varphi}_1}{\varphi_1} R; \quad \Theta_0 = - \frac{\beta R}{\varphi_1^2 + k_2 R^2 + k_4 z^2}; \quad Z_0 = \frac{\dot{\varphi}_2}{\varphi_2} z = \frac{\dot{\varphi}_1}{\varphi_1} z. \quad (41)$$

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The dynamics of a nonsteady ...

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E001/E120

These formulas indicate that the galaxy is contracting or expanding isotropically, in addition to non-barotropic rotation.

ASSOCIATION: Gos. astronomicheskiy in-t im. P.K. Shternberga
(State Astronomical Institute imeni P.K. Shternberg)

SUBMITTED: January 25, 1962

Card 3/3

GENKIN, I.L.

Application of the synthetic method to the dynamics of
nonsteady-state stellar systems. Izv. AN Kazakh. SSR. Ser.
fiz.-mat. nauk no.3:3-9 S-D '64. (MIRA 17:12)

GENKIN, I.L.

The vertex deviation in the general dynamic problem. Trudy
Astrofiz. inst. AN Kazakh. SSR 5:23-29 '65.

System of galactic constants. Ibid.:101-104

(MIRA 18:6)

GENKIN, I.L.

Fluctuations in gravitating systems. Astron. zhur. 43 no. 1:
96-98 Ja-F '66 (MIRA 19:2)

1. Astrofizicheskiy institut AN KazSSR. Submitted December 11,
1964.

GENKIN, I. S.

GENKIN, I. S.

**Modification of intra-aural radical surgery. Vest. otorinolar.
1214, July-Aug. 50. p. 46-9**

**1. Of Leningrad Scientific-Research Institute for Diseases of the
Ear, Throat, Nose, and Speech (Director—Prof. I. A. Lopotko;
Scientific Director—Prof. V. I. Veyachek, Active Member of the
Academy of Medical Sciences.**

GLML 19, 5, Nov., 1950

GENKIN, I. Z.

U S S R .

11004. Increasing the Strength of Welded Rails of New-Type Steels by Means of Mechanical and Heat Treatment of the Butt Joints. Povyshenie prochnosti svarnykh rel'sov iz stali novykh marok putem mekhanicheskoi i termicheskoi obrabotki stykov. (Russian.) I. Z. Genkin. Svarochnoe Proizvodstvo, 1955, no. 5, May, p. 5-8.

Comparison of fatigue strength, etc. of whole rails, bolt joints, and rails welded by contact, thermit, and other methods. Effect of polishing, annealing, etc. Micro-structure of steels at weld union. Tables, graphs, micrographs, diagrams.

Opytno-svarochnyy zavod Tsentral'nogo Nauchno-issledovatel'skogo instituta
Ministerstva putey soobshcheniya.

GIBKIN, I.Z., inzhener; STROYEV, V.S., inzhener.

Building up anticlines where there is uneven wear of rail ends.
Put' 1 put. khos. no. 5:12-13 My '57. (MLBA 10:6)
(Railroads--Rails)

SCV/135-59-7-4/18

25(1,5)
AUTHOR:

Genkin, I.Z., Engineer

TITLE:

Resistance Welding of Rails

PERIODICAL:

ABSTRACT:

Svarochnoye proizvodstvo, 1959, Nr 7, pp 12-15(USSR)
A number of research organizations developed systematic methods and technologies for welding, as well as mechanical and thermal treatment of rail butts, studying the strength and the behavior of welded rail joints under operational conditions. These organizations are: Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta (All-Union Scientific Research Institute of Railroad Transport), Opytnyy svarochnyy zavod Vosgorsovnarkhoza (Experimental Welding Plant of the Vosgorsovnarkhoz), Institut elektrosvarki AN USSR imeni Akademika Ye. O. Patona (Institute of Electrical Welding of the AS USSR imeni Ye. O. Paton), Institut metallurgii AN SSSR (Institute of Metallurgy of the AS USSR). A considerable effort was made for developing welding machines for heavy rails. The plant "Elektrik" produces welding machines RSM-320 U and

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APPROVED FOR RELEASE

Resistance Welding of Rails

SOV/135-59-7-4/15

MSGR-500-4 for butt-welding of rails with pre-heating. The Institute of Electrical Welding AS UkrSSR conducts investigations concerning the introduction of butt welding of RR joints by means of continuous fusion with application of contour transformers and currents of reduced frequency (10 cycles) for which experimental equipment was designed. The author compares the resistance welding of rail joints with arc welding and thermite welding. He states that resistance welding has a higher productivity and is cheaper than arc or thermite welding. The author states that local heat treatment will increase the reliability of joints. Fig. 10 shows a photograph of a device for local electro-thermal treatment (normalization) of butts with controlled heating temperature. In his conclusions the author states that resistance welding produces highly reliable and economical joint-welded rails, having a constant quality. It is necessary to organize a mass production of butt-welding machines especially for heavy rails, devices for heat treatment and instruments for detecting effects in joints. Further, the number of

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Resistance Welding of Rails

SOV/125-52-7-4/15

specialized organizations performing welding of rails must be increased. There are 3 photographs and 9 graphs.

ASSOCIATION: Opytnyy svarocnyy zavod Mosgorsovnarkhoza
(Experimental Welding Plant of Mosgorsovnarkhoz)

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GENKIN, I. I.

PHASE I BOOK EXPLOITATION

SOV/5975

International Institute of Welding

XII kongress Mezhdunarodnogo instituta svarki, 29 iyunya - 5 iyulya 1959 v g.
Opatii (Twelfth Annual Assembly of the International Institute of Welding,
Opatija, June 29 - July 5, 1959) Moscow, Mashgiz, 1961. 359 p. 3000
copies printed.

Sponsoring Agency: Natsional'nyy komitet SSSR po svarke.

Ed. (Title page): G. A. Maslov, Docent; Translated from English, French,
and Serbo-Croatian by N. S. Aborenkova, K. N. Belyayev, E. P. Bogacheva,
L. A. Borisova, K. V. Zvegintseva, V. S. Minavichev, and M. M. Shelechnik;
Managing Ed. for Literature on the Hot-Working of Metals: S. Ya. Golovin,
Engineer.

PURPOSE: This collection of articles is intended for welding specialists and
the technical personnel of various production and repair shops.

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Twelfth Annual Assembly (Cont.)

COVERAGE: The collection contains abridged reports presented and discussed at the Twelfth Annual Assembly of the International Institute of Welding. Reports deal with problems of welding and related processes used in repair work, repair techniques, and the problems arising in connection with the nature of the base and filler materials. Examples of repairing various parts are given, and the organization of repair operations in workshops and under field conditions is discussed. Economic aspects of welding and related processes as used in repair work are analyzed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS: [Only Soviet and Soviet-bloc reports are given here]

Foreword

5

**PART I. THE STUDY OF REPAIR-WORK TECHNIQUES
(PROCESSES, METHODS, PREPARATION, HEATING, AND
OTHER TYPES OF PROCESSING CONTROL)**

Myuntser, L. (Czechoslovakia). Welding of Broken Crankshafts

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Twelfth Annual Assembly (Cont.)

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Genkin, I. Z., and A. F. Zolotarskiy (USSR). Increasing the
Strength and Extending the Service Life of Welded Rails and Frogs 172

Vegrzhin, Zh. (Poland). Alloying Fluxes for Restoring Parts by
Submerged Arc Welding 182

Chikara, M. (Yugoslavia). Thermite Welding in Restoring Rails;
Certain Characteristics Obtained in Testing Welded Joints 224

PART III. TYPICAL EXAMPLES OF PARTS RECLAMATION
(ROLLING STOCK, SHIP STRUCTURES, MINING AND METALLURGICAL
EQUIPMENT, MACHINES, AND TOOLS)

Vrana, B. (Czechoslovakia). Practices in the Repair of Cutting
Tools With the Use of Welding Processes 291

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GENKIN, I.Z., inzh.

Increasing the strength and service life of welded rails. Put' 1
put.khoz. 6 no.2:27-29 '62. (MIRA 15:2)
(Railroads--Rails)

GENKIN, I.Z., inzh.

Defects in the processing of welded rails. Put' i put.khoz. 6 no.6:31-
33 '62. (MIRA 15:7)

(Railroads--Rails--Welding)

GENKIN, I.Z., inzh.

Make correct use of all welding types. Put' i put.khoz.
no.7:29-30 '62. (MIRA 15:7)
(Railroads--Rails--Welding)

GENKIN, I. Z., inzh.

First experience in the welding of hardened rails. Put' i put.
khoz. 7 no. 6:11-12 '63. (MIRA 16:7)

(Railroads--Rails--Welding)

GENKIN, K. I.

GENKIN, K.I., kandidat tekhnicheskikh nauk.

[Compressed gas for automobiles] Avtomobili na szhishennom gase.
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1945.
67 p. (MIRA 7:7)
(Automobiles—Engines(Compressed gas))

GENKIN, K.

"Economy of fuel account by the application of poor mixtures and optimal regulation," Automobile, 1951.

1. ИВАНОВ, К. И.; Сенчугов, В. В.; Кеняш, Н. С.; Чураков, Е.А.
2. USSR (600)
7. Two-cycle, Rapid-Action, Gas Engine Based on the Engine YaAZ-200,
Herald of Machine Construction No. 1, Jan 53
9. Compilation of Information of the USSR Machine and Machine Tools Industry
Contained in Soviet Publications. ~~XXXXXXXXXX~~

GENKIN, K. I.

262T15

USSR/Engineering - Machine Studies,
Gas Engine

Feb 53

"Investigation of the Operation Process in a Two-
Cycle High-Speed Gas Engine," Acad Ye. A. Chudakov,
K. I. Genkin

Iz Ak Nauk SSSR, OTN, No 2, pp 244-254

Studies operation of engine designed at Inst of
Machine Sci, Acad Sci USSR, jointly with Yaroslavl'
Automobile Plant, indicating internal mixture for-
mation as major feature of new engine. Compares
its performance with that of standard YaAZ-204 en-
gine used for driving Soviet heavy trucks, tractors,
and buses.

262T15

GENIN, K.I.

GENIN, K.I.

Ovlivlenii khimicheskogo i turbulentnogo faktorov na sgoranie v porshnevom dvigatele s iskrovym zazhiganiem. (Akademia Nauk SSSR. Izvestia. Otdelenie tekhnicheskikh nauk, 1953, no.3, p. 40-46, Russ., bibliography)

Title tr.: Effect of chemical properties and turbulence on combustion in piston sparkignition engines.

AS262.A62in4 1953

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

CHUDAKOV, Ye.A., akademik; GLENKIN, K.I.; LYZO, G.P., redaktor; ZELENKOVA,
Ye.V., tekhnicheskii redaktor.

[Automobile gas engines with internal carburetion] Transportnyi gazo-
vyi dvigatel' s vnutrennim smeseobrazovaniem. Moskva, Izd-vo Akad.
nauk SSSR, 1954, 219 p. (MLRA 8:2)
(Automobiles--Engines (Compressed gas))

GENKIN, K.I., kandidat tekhnicheskikh nauk.

Theory and construction of reciprocating engines (conference in the
Laboratory of Engines of the Academy of Sciences of the U.S.S.R.).

Vest. AN SSSR 24 no.10:90-91 0 '54.

(MIRA 8:1)

(Gas and oil engines)

GENKIN, K.I.; SVIRIDOV, Yu.B.; KHMML'NITSKIY, A.P., otvetstvennyy redaktor;
KLENNIKOV, B.M., redaktor izdatel'stva; MOSKVICHENYA, N.I., tekhnicheskiiy redaktor

[Internal combustion piston engines; proceedings of a conference on piston engines] Porshnevye dvigateli vnutrennego agoraniya; trudy konferentsii po porshnevym dvigateliam. Moskva, 1956. 352 p.

(MLRA 9:9)

1. Akademiya nauk SSSR. Laboratoriya dvigateley.
(Gas and oil engines)

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 8, p 38 (USSR) SOV/124-58-8-8613D

AUTHOR: Genkin, K. I.

TITLE: A Study of the Operating Process of Automobile Gas Engines
(Issledovaniye rabochego protsessa avtomobil'nykh gazovykh
dvigateley)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of
Doctor of Technical Sciences, presented to the Mosk. avtomob. -dor.
in-t (Moscow Automobile Highway Institute), Moscow, 1957

ASSOCIATION: Mosk. avtomob. -dor. in-t (Moscow Automobile Highway
Institute), Moscow

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SOV/112-59-4-6594

14(6), 32(2, 3)

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 4, p 30 (USSR)

AUTHOR: Genkin, K. I.

TITLE: ~~Exhibit~~ Methods of Using Gas in Piston Motors

PERIODICAL: V sb.: Ispol'zovaniye gaza v teplosilovyykh ustanovkakh. M.-L., Gosenergoizdat, 1957, pp 107-114

ABSTRACT: Modern gas motors have a compression up to 12-15, an average effective pressure 10 kg/cm² or more, a heat consumption of about 1,750 kcal/hp, and an efficiency up to 40%. Gas-liquid-cycle motors and spark-ignition motors are widely used. Two-cycle motors with gas-turbine charging, internal mixing, and spark ignition are progressive. Cylinder-and-piston wear and lubricating-oil consumption is 2-3 times lower for gas motors than for gasoline motors or diesels. In 1949-1951, an original high-efficiency gas motor was developed by the Laboratory of Motors, AS USSR, on the basis of a YaAZ-204 motor. Using natural gas in piston-type motors for electric-energy

Card 1/2

GENKIN, K. I.

AUTHOR: Genkin, K. I.

24-8-32/34

TITLE: Conference on developing gas operated piston engines.
(Soveshchaniye po razvitiyu porshnevykh dvigateley na gaze).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk"
(Bulletin of the Ac.Sc., Technical Sciences Section),
1957, No.8, pp. 166-167 (U.S.S.R.)

ABSTRACT: This conference was held in May, 1957 at the Engine Laboratory, Ac.Sc., U.S.S.R. (Laboratoriya Dvigatelay AN SSSR) and dealt with development of stationary and railway traction piston engines operating on natural, industrial and compressed gas. In his opening address Academician B. S. Stechkin pointed out that the development of gas engines is of great importance in view of the growth of the gas industry. Yu. I. Bokserman, Chief of the Technical Directorate of Glavgaz outlined the prospects of development of the Soviet gas industry; the gas production is to be stepped up to 60 milliard m³ in 1960 and 130 milliard m³ in 1965. In addition to satisfying all the domestic and industrial requirements, there will be ample possibilities for utilising gas as a motor fuel; the cost of a unit of heat in natural gas is appreciably lower than in oil or coal.

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Saltykovskiy, V. V. (TsNIDI) and K. I. Genkin (Engine Laboratory, Ac.Sc., U.S.S.R.) outlined the present state and

24-8-32/34

Conference on developing gas operated piston engines. (Cont.)
the scientific and technical problems of developing gas
operated piston engines.

V. V. Grodzyalkovskiy, . . . (Ukrgiproga) dealt with the
problems of free piston gas engines.

V. P. Alekseyev (MVTU) reported on results of investigations
on the possibility of using ammonia as a motor fuel which is
only possible by adding oxygen. The chief designers of a
number of works dealt with the work of the industry in
developing gas engines and the problems of utilisation of
gas engines were also dealt with by representatives of the
oil and gas industries and railway transportation. The
inadequate development of gas engines was emphasized,
particularly that natural gas is not being used in small and
medium size power stations where it could be used most
effectively. A resolution was passed on creating at the
Engine Laboratory, Ac.Sc. an interdepartmental commission for
coordinating the research and experimental work in the field
of gas engines. It was also decided to publish the
transactions of the conference.

AVAILABLE: Library of Congress

Card 2/2

GENKIN, K.I.

Changing a stationary diesel with turbo supercharger over to natural
gas. Energ.biul. no.10:30-31 0 '57. (MIRA 10:10)
(Diesel engines)

GENKIN, K. I.

I. I. Vibe, N. K. Arslanov, and Z. M. Minkin and others "Heat Production in the engine and its influence on the stroke"

report presented at the conference on Combustion and Formation of the Mixture in Diesel Engines, convened by the Motor Laboratory, Acad. Sci. USSR, Moscow 10-12 June 1958.

(Vest. Ak Nauk SSSR, 1958, No. 9, 115-117)

GENKIN, K.I.

Gas industry is in need of highly efficient power units. Gaz.prom.
4 no.8:46-47 '59. (MIRA 12:11)
(Gas, Natural--Pipelines) (Compressors)

STECHKIN, Boris Sergeyevich, akademik; GENKIN, Konstantin Isayevich;
ZOLOTAREVSKIY, Vladimir Semenovich; SKORODINSKIY, Izrail'
Vol'fovich; GRIGOR'YEV, Ye.N., red.izd-va; RYLINA, Yu.V.,
tekhn.red.

[Indicator diagram, dynamics of heat generation, and operating
cycle of a high-speed piston engine] Indikatorskie diagrammy,
dinamika teplovydeleniya i rabochii tsikl bystrokhodnogo porshne-
vogo dvigatelya. Moskva, Izd-vo Akad.nauk SSSR, 1960. 198 p.

(MIRA 14:2)

(Gas and oil engines)

GENKIN, K.I.; MOROZOV, K.A.

Highly efficient gas engine with a torch igniter for compressor
stations on gas pipelines. Gas. prom. 6 no.3:29-34 '61.

(MIRA 14:3)

(Gas and oil engines) (Gas, Natural—Pipelines)

GENKIN, K.I., doktor tekhn. nauk; TSVETKOV, V.V., inzh.

Discussing V.P. Alekseev's article "Quality factor of the working
performance of an internal combustion engine."

Energomashinostroenie 7 no.2:40-41 P '61.

(MIRA 16:7)

(Gas and oil engines--Testing)

GENKIN, K.I., doktor tekhn.nauk; MOROZOV, K.A., kand.tekhn.nauk; SYUN'
SHAN'-I [Hsün Shan-i], inzh.; EFENDIYEV, V.S., inzh. Prinimali
uchastie: ROZENBAUM, V.M.; BELIKOV, A.I.

Performance of a gas diesel engine developed on the basis of the
2D-100 two-stroke diesel design. Energomashinostroenie 7
no.8:9-11 Ag '61. (MIRA 14:10)
(Gas and oil engines)

GENKIN, Karp Isaakovich; CHEKMENEV, Ye.Ye., inzh., retsenzent;
KUDRYASHOV, G.F., inzh., retsenzent; BULATOV, S.I., red.
izd-va; DEMKINA, N.F., tekhn. red.

[Gas engines]Gazovye dvigateli. Moskva, Mashgiz, 1962. 114 p.
(MIRA 15:10)

(Gas and oil engines)

SIDORENKO, M.V.; GENKIN, K.I.

Power drive for compressor stations. Gaz. prom. 8 no. 7:43--46
'63. (MIRA 17:8)

ARMSTRONG, D.M.; GIBBINS, J.L.; JAMES, J.L.

1100100 gas meter-governor. Gov. proc. 1100100 (1100100:12)

USSR/Telegraphy, Two-tone
Telephones - Apparatus

Jun 1947

"Improving the Quality of Telephone Channels
in Use for Tonal Telegraphy," L. N. Gonkin,
3 pp

"Vest Svyaz, Elektro Svyaz'" No 6

Deals with communication service, automatic
regulating device (ARU), regulating by tension,
switching of batteries, security of communi-
cations from mud and from atmospheric discharge.

17T105

SOV/112-58-1-1034

Translation from: Referativnyy zhurnal, Elektrotehnika, 1958, Nr 1, p 153 (USSR)

AUTHOR: Genkin, L. S.

TITLE: Automatic Monitoring and Reckoning of Work of a Dough-Producing Machine Developed by I.L.Rabinovich, Eng. (Avtomatizatsiya kontrolya i ucheta raboty testoprigotovitel'nogo agregata sistemy inzh. I. L. Rabinovicha)

PERIODICAL: Khlebopek. i konditersk. prom-st', 1957, Nr 2, pp 39-42

ABSTRACT: At the Leningrad #3 bread-baking factory, the following devices are used for monitoring the dough-making machine: water, salt, sugar, and yeast low-level indicators on the equalizing tanks operate on break of contact between the liquid and the electrode; copper resistance thermometers (with a switch and a logometer) installed in mixing tanks. To prolong service life of mercury thermometers of the water-temperature controllers in mixing tanks manufactured by KIP Tallin factory, an electron relay with a 6N8 tube has been designed that reduces the control-circuit current from 30-40 ma down to 30-40 μ a. For keeping tab of work and outage of the machine, a recording device was built

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SOV/112-58-1-1034

Automatic Monitoring and Reckoning of Work of a Dough-Producing Machine

(from a recording pressure gauge); the device operates from the magnetic starter of the kneader motor. There are 3 illustrations.

V.F.R.

AVAILABLE: Library of Congress

1. Industrial plants---Automation 2. Food--Preparation 3. Recording devices--Performance

Институт — Ленинградский политехнический институт (Ленинградский политехнический институт)

Card 2/2

KROPOTOV, Aleksandr Ivanovich; GENKIN, L.S., red.; TELYASHOV,
R.Kh., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Photocell pickups in control equipment of chemical
industries] Fotoelementy - datchiki v priborakh kontrolya
khimicheskikh proizvodstv. Leningrad, 1963. 19 p. (Lenin-
gradskii dom nauchno-tekhnicheskoi propagandy. Obmen pere-
dovym opytom. Seriya: Pribory i elementy avtomatiki, no.19)
(MIRA 16:12)

(Chemical industries) (Automatic control)
(Photoelectric cells)

19.000, 11. 11.

The operator and his assistant in petroleum extraction. 1942. 47 p. (7 figs. and 1 table).
ind-ye neftianoi i gorno-tselivnoi lit-ry. 1942. 47 p. (7 figs. and 1 table).
neftian'kov) (42-55513)

TN671.045

СЕРИИ, П. 4.

The operator and his assistant in petroleum extraction P., paper. i det. izi. Moskva,
Gos. nauch.-tekhn. izd-vo neftianoi i gornoi-torlivnoi lit-ry, 1945. 30 s. (V serii
novye kladra neftianoi promyshlennosti) (50-15329)

TS871.545 1945

GENKIN, M. A.

"Investigation of the Separation of Natural Gas." Sub 29 Jun 51,
All-Union Sci Res Inst of Natural Gases (VNIIGaz)

Dissertations presented for science and engineering degrees in
Moscow during 1951.

SC: Sum. No. 480, 9 May 55

GENKIN, M. A.

AID P - 825

Subject : USSR/Engineering

Card 1/1 Pub. 78 - 10/26

Authors : Genkin, M. A., Minskiy, Ye. M., Kozlov, A. L.,
~~TeVerovskiy~~, Ye. N. and Shirokov, F. I.

Title : Cyclonic separator of the VNII (All-Union Scientific
Research Institute)

Periodical : Neft. khoz., v. 32, #9, 41-43, S 1954

Abstract : The cyclone type of water and dust particle separation
from natural gas is described. A spiral deflector without
moving parts is used for turbulent rotation of gas and a
180° turn for particle separation. Apparatuses of various
capacities are outlined on 3 drawings. 2 Russian references
(1950-1951).

Institution: Scientific Research Institute. Gas Division (NIIOG)

Submitted : No date

GENKIN, M.A.; YERMILOV, V.I.; KHEYN, A.L.

Method for optimum drilling of gas wells. Gas.prom no.1:9-12 Ja '56.
(MIRA 10:1)

(Boring) (Gas, Natural)

TK 3442

GENKIN, M. D.

USSR/Mechanics
Kinematics
Mathematics - Applied

Aug 1947

"Kinematics and Dynamics of the Meshing Process of
Cylindrical Toothed Wheels," M. D. Genkin, 3¹/₂ pp

* "Stanki 1 Instrument" No 8 pp 20-23

Conclusion of an article which began in "Stanki 1
Instrument" No 7, 1947. Discusses the system of mesh-
ing of two pairs of teeth, and mathematical formulas
for calculating the force which is distributed be-
tween the two pairs of teeth. Brief explanation of
the generation of meshing and determining the meshing
process.

34742

GERSH, M. D.

"Labor-Saving Methods in the Manufacture of Cylindrical Cog Wheels for Motor Vehicles," Avtomobil'naya Promyshlennost', No. 1, 1948.

Cand. Tech. Sci.

GENKIN, M. D.

USSR/Engineering
Machines, Milling
Worms

Mar 1948

"Profiling of Worm Miller for Finished Cylindrical Gears Prior to Shaving," A. O. Etin,
Cand Tech Sci, M. D. Genkin, 54 pp

"Stanki i Instrument" No 3

Describes processes performed for facilitating work of shaving a screw worm on various
parts of machines to determine methods for more efficient clearing of the teeth of the
shaver.

PA76T28

GENMIN, M. D.

"Investigating the Hall-Kikoin Effect of Dynamic Steel in Strong Fields,"
Zhur. Eksper. i Teoret. Fiz., 20, No. 10, 1950.

CHERNIN, N. D., FLYSH, I. A.

"A Machine Tool for Balancing Crankshafts", Stanki i Instrument, 10, No. 7, 1939,
Engineer.

Report U-1505, 4 Oct 1951.

1. QENKIN, M. D.
2. SSSR (600)
4. Gearing
7. Ways and means of reducing gear noise.
Vest. mash. 32 No. 7. 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

GENKIN, M.

New methods for examining cog-wheels: also, remarks by E. Vagyari
and others. n. 451

Vol. 16, no. 2/4, 1955
KOZ'LENIYEI

SOURCE: Monthly list of East European Accession, (FFA'), IC,
Vol. 5, No. 3, March, 1956

GENKIN, M.D.

744. New methods of gear inspection. (In English. M.L.
GENKIN. *Acta Technica Academiae Scientiarum
Hungaricae* Vol. 14, 1956, No. 1-4, pp. 217-248, 2
figs.

The paper presents two new methods of testing gears which are based on qualifying gears according to the composite error of contact and the noise produced. These methods are currently applied in several branches of the engineering industry in the Soviet Union. They are in contradiction to the German, British, Belgian, and other standard specifications according to which the quality of gears must be determined individually, and combination checking is suggested only in voidless contact as a complement. However, if the performance and speed are raised and noiseless drive conforming to modern standards is required, it is necessary to investigate errors by dynamical methods. The paper comments on research conducted in the Soviet Union in this field.

MM

PETRUSEVICH, Al'fred Ivanovich; ~~GRINKIN~~, Mikhail Dmitriyevich; GRINKEVICH,
Vladimir Kazimirovich; BEKASOVA, L.M., redaktor izdatel'stva;
ASTAF'YEVA, G.A., tekhnicheskij redaktor

[Dynamic loads on gearing with straight tooth gears] Dinamicheskie
nagruzki v zubchatykh peredachakh s priamozubnymi kolesami., Moskva,
Izd-vo Akademii nauk SSSR, 1956. 133 p. (MLRA 9:12)
(Gearing)

GRINKIN, Mikhail Dmitriyevich; GRINKEVICH, Vladimir Kazimirovich; SELIVANOV, K.I., nauchnyy red.; ISAYEV, V.A., red.; FRUMKIN, P.S., tekhn.red.

[Noise in reduction gears of ship engines] Shum reduktorov sudovykh dvigatelei. Leningrad, Gos. soizuznoe izd-vo sudostroit. promyshl., 1957. 79 p. (MIRA 11:3)

(Marine engines) (Noise)

ZABLONSKIY, K.I., kand.tekhn.nauk, otv.red.; BOHOVICH, L.S., kand.tekhn.nauk, red.; BELYAYEV, M.S., inzh., red.; GRENKIN, M.D., kand.tekhn.nauk, red.; ZAK, P.S., kand.tekhn.nauk, red.; KIST'YAN, Ya.G., kand.tekhn.nauk, red.; KUDRYAVTSEV, V.N., doktor tekhn.nauk, red.; MAL'TSEV, V.F., kand.tekhn.nauk, red.; POLOTSKIY, M.S., kand.tekhn.nauk, red.; ERLIKH, L.B., kand.tekhn.nauk, red.; NIKIFOROV, I.P., inzh., red.; KOMISSARENKO, A.R., tekhnred.

[Design, construction, and analysis of drives; proceedings of the conference on problems in designing, constructing, and analyzing gear drives and flexible gearing. September 23-28, 1957] Raschet, konstruirovaniye i issledovaniye peredach; trudy konferentsii po voprosam rascheta, konstruirovaniia i issledovaniia subchatykh peredach i peredach gibkoi svyaz'iu 23-28 sentyabrya 1957 g. Izd-vo Odesskogo politekhn.in-ta. Vol.1. 1958. 199 p. Vol.2. 1958. 94 p. (MIRA 12:5)

1. Odessa. Politeknicheskii institut.
(Gearing)

GENKIN, M.D., kand.tekhn.nauk; KUZ'MIN, N.F., dot., kand.tekhn.nauk;
MISHARIN, Yu.A., kand.tekhn.nauk

Effect of friction conditions on the friction coefficient in
case of rolling with slipping. Izv.vys.ucheb.zav.; mashinostf.
no.2:21-28 '58. (MIRA 11:12)

1. Institut mashinovedeniya AN SSSR i Novocherkasskiy
politekhnichekiy institut.
(Friction)

ZABLONSKIY, K.I., kand.tekhn.nauk, otv.red.; BOHOVICH, L.S., kand.tekhn. nauk, red.; BELYAYEV, M.S., inzh., red.; GENKIN, M.D., kand.tekhn. nauk, red.; ZAK, P.S., kand.tekhn.nauk, red.; KIST'YAN, Ya.G., kand.tekhn.nauk, red.; KUDRYAVTSEV, V.N., doktor tekhn.nauk, red.; MAL'TSEV, V.F., kand.tekhn.nauk, red.; POLOTSKIY, M.S., kand.tekhn. nauk, red.; ERLIKH, L.B., kand.tekhn.nauk, red.; NIKIFOROV, I.P., inzh., red.; KOMISSARENKO, A.R., tekhred.

[Design, construction, and investigation of transmissions; proceedings of the conference on design, construction, and investigation of transmissions; proceedings of the conference on design, construction, and investigation of gear and flexible transmissions of September 23-28, 1957] Raschet, konstruirovaniye i issledovaniye peredach; trudy konferentsii po voprosam rascheta, konstruirovaniya i issledovaniya zubchatykh peredach i peredach gibkoi svyaz'iu 23-28 sentyabrya 1957 g. Odessa, Izd.Odesskogo politekhn.in-ta. Vol.3. 1959. 123 p. (MIRA 12:10)

1. Odessa. Politekhnikheskiy institut.
(Gearing)

PHASE I BOOK EXPLOITATION

SOV/3601

Genkin, Mikhail Dmitriyevich, Nikolay Fedotovitch Kuz'min, and Yuriy Aleksandrovich Misharin

Voprosy zayedaniya zubchatykh koles (Problems of Welding Wear of Gear Teeth)
Moscow, Izd-vo AN SSSR, 1959. 146 p. 4,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.

Resp. Ed.: S. V. Pinegin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: P. S. Kashina.

PURPOSE: This book is intended for technical personnel dealing with toothed gear design. It may also be used by students in advanced engineering courses.

COVERAGE: A method for calculating welding wear of gear teeth is described. The method was developed by the Institut mashinovedeniya AN SSSR (Institute of Machine Science, Academy of Sciences USSR) and is said to have been proven practicable in the aircraft industry and other related branches of industry. It is based on temperature flashes at the contact surface of gear teeth. Problems of lubrication and the lubrication characteristics of various lubricants are investigated by means of a specially designed testing machine;

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Problems of Welding Wear of Gear Teeth

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results are given in graphs and tables. Experimental data on friction coefficients and welding wear are tabulated in Appendixes I and II. The authors thank the following persons for their assistance: A.A. Blagonravov, Academician; V.G. Mikhaylov, Doctor of Technical Sciences, Professor; M.M. Khrushchov, Doctor of Technical Sciences, Professor; V.A. Gavrilenko, Doctor of Technical Sciences, Professor; V.S. Shchedrov, Doctor of Technical Sciences, Professor; and G.M. Krasivina, A.V. Sivyakova, K.S. Sokolova, and N.N. Sychkov. There are 86 references: 30 Soviet, 48 English, 7 German, and 1 French.

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Problems of Welding Wear of Gear Teeth

SOV/3601

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VK/sfm

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7-8-60

SOV/122-59-4-5/28
AUTHORS: Genkin, M.D., Kuz'min, N.F., and Misharin, Yu.A.,
(Candidates of Technical Sciences)

TITLE: Experimental Relations for the Determination of Friction
Coefficients in the Tooth Contact of Gear Wheels
(Eksperimental'nyye zavisimosti dlya opredeleniya
koeffitsiyentov treniya v kontakte zub'yev zubchatykh
koles)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 4, pp 29-32 (USSR)

ABSTRACT: Tests involving rollers in a combination of sliding and
rolling motion simulating tooth contact have not so far
been conducted to cover the range of speeds encountered
far away from the pitch point where seizure is most
likely. At the Institut Mashinovedeniya (Mechanical
Engineering Institute), AN SSSR, in association with the
Novocherkasskiy Politekhnicheskii Institut (Novocherkassk
Polytechnical Institute) imeni S. Ordzhonikidze, tests
were carried out under large contact stresses, at large
rolling and sliding speeds in the presence of
lubrication. The contact stresses reached 3000 kg/cm²,
the sliding speeds varied up to 12 m/sec and the rolling
speed was constant at 23.3 m/sec. Diverse materials for
Card 1/3 the small (60 mm diameter) and large (90 mm) roller and

SOV/122-59-4-5/28

Experimental Relations for the Determination of Friction
Coefficients in the Tooth Contact of Gear Wheels

different lubricants were used (summarised in the table). The temperature of the small roller was measured with a thermocouple and was controlled by heating or cooling the oil. The friction torque was measured. About 10,000 measurements of the coefficient of friction were carried out for different combinations of materials, lubricants and other conditions. At high speed, hydrodynamic lubrication is prevalent. A typical friction coefficient would be 0.02, but never exceeding 0.085. The friction coefficient is independent of the material of the rubbing surfaces, changes little with the contact stress, diminishes with increasing sliding and rolling speeds, increases with rising temperature and diminishes with increasing oil viscosity (at the same temperature). In the important range of variables, the coefficient of friction can be plotted as a function of the product of oil viscosity, rolling speed and sliding speed and yields a straight line in logarithmic co-ordinates. The slope corresponds to an exponent of 0.25. Such a formula is valid only between the breakdown of the

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SOV/122-59-4-5/28.

Experimental Relations for the Determination of Friction
Coefficients in the Tooth Contact of Gear Wheels

shear strength of the oil corresponding to a friction coefficient of 0.08 at one end and the breakdown of the thickness of the oil layer corresponding to a friction coefficient of 0.02. Between these values the formula is said to represent the friction between gear teeth within an accuracy of 15%, either way.

There are 1 figure, 1 table and 3 Soviet references.

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25(6)

SOV/113-59-5-15/21

AUTHORS: Genkin, M.D., Candidate of Technical Sciences, Denisova, M.N., Filimonov, O.S.

TITLE: Estimating the Quality of Mechanisms by Their Vibration Indexes

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 5, pp 37 - 42 (USSR)

ABSTRACT: NIIAvtoprom, in cooperation with mechanical engineering plants of the AS USSR, conducted investigations on the causes of noises and vibrations in automotive mechanisms, above all in transmissions. A special apparatus was developed for objective evaluation of various mechanisms by the noise they create. The apparatus - a differential noise meter with inductance and capacitance filters - will measure mean and peak noises as well as noise irregularities in distinction from existing noise meters which determine only the mean noise level. The peak noises and the noise irregularities determine

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SOV/113-59-5-15/21

Estimating the Quality of Mechanisms by Their Vibration Indexes

type and character of knocking, howling, etc. The results of special and series measurements, the investigation of sedan and freight truck transmissions on test stands, were used for establishing the relations for determining the ultimate noise levels under consideration of design and technological peculiarities of gears and transmission housings. A new method for estimating the quality of different automotive mechanisms by their vibration level was developed. This new method eliminates the influence of environment noise and it may be used under shop conditions for a hundred-per-cent control. The investigations were conducted by comparative measurements and analyses of noises and vibrations of transmissions and other automotive assemblies. The authors then describe the vibration measuring apparatus in detail. The noise pick-ups were developed by the Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering of the AS, USSR) and contain

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Estimating the Quality of Mechanisms by Their Vibration Indexes

barium titanate plates as sensitive elements. In Table 1, the authors compare the pick-ups IDK-1, IDK-2, IDK-2T, IDK-V with similar devices manufactured in the USA, England, and Denmark. Pick-ups of type IDK-1, IDK-2, IDK-2T have frequency ranges from 5 to 20,000 cycles. The pick-ups are calibrated on a test stand, shown in Figure 3. Further, the authors explain peculiarities of the measurements. For example, the electric motor driving the assembly to be tested must be suspended in such a way that its own oscillations are not transferred to the assembly being investigated. The authors present the results of measurements performed on transmissions and rear axles of a ZIL-110, "Pobeda", "Moskvich-402" by several graphs. Figure 9 shows a test stand for shock absorber vibration. The investigations showed that the method has a suf-

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Estimating the Quality of Mechanisms by Their Vibration Indexes

ficiently high accuracy when applied for telescoping shock absorbers. There is 1 photograph, 3 diagrams, 6 graphs, and 5 tables.

ASSOCIATION: Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering of the AS, USSR); IITAvtoprom

Card 4/4

GENKIN, M.D.

PHASE I BOOK EXPLOITATION

SOV/5053

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 34, 1958.

Iznoa i iznosostoyost'. Antifriktsionnyye materialy (Wear and Wear Resistance. Antifriction Materials) Moscow, 1960. 400 p. 35SR, 1960. 273 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 1)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: M. M. Krunchov, Professor; Eds. of Publishing House: M. Ya. Klebanov, and S. L. Orlik; Tech. Ed.: Z. V. Polyakova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences SSSR) contains reports presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. The reports discussed were in 5 main areas: 1) Hydrodynamic Theory of Lubrication and Friction Bearings (Chairman: Ye. M. Gerasimov, Doctor of Technical Sciences, and A. K. D'yachkov, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: G. V. Vinogradov, Doctor of Chemical Sciences); 3) Dry and Boundary Friction (Chairman: M. M. Krunchov, Corresponding Member of the Academy of Sciences SSSR, and V. Kravtsov, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Krunchov, Doctor of Technical Sciences); and 5) Friction and Antifriction Materials (Chairman: Z. V. Kravtsov, Doctor of Technical Sciences). Chairman of the general assembly (on the first and last day of the conference) was Academician A. A. Blagonravov. L. Yu. Pruzhanskiy, Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes, of which the present volume is the first. This volume contains articles concerning the wear and wear resistance of antifriction materials. Among the topics covered are: modern developments in the theory and experimental science of wear resistance of materials, specific data on the wear resistance of various combinations of materials, methods for increasing the wear resistance of certain materials, the effects of friction and wear on the structure of materials, the mechanism of the seizing of metals, the effect of various types of lubricating materials on seizing, abrasive wear of a wide variety of materials and components under many different conditions, modern developments in antifriction materials, and the effects of finish machining on wear resistance. Many personalities are mentioned in the text. References accompany most of the articles.

Yankovich, V. E. Increasing the Wear Resistance of Steel by Means of Treatment by a Flow of Compressed High-Temperature Gases

93

2. Seizing of Metals. Structural Changes in Metals Due to Friction. Mechanical Properties of Metals.

Arbinder, S. M., and A. S. Franch. On the Mechanism of the Formation and Breakdown of Seizing in the Case of Friction of Metals

99

Vinogradov, Yu. M. Effect of Sulfides on the Friction and Wear of Metals

105

Genkin, M. D.; M. P. Kur'min, and Yu. A. Msharin. Investigation of the Seizing of the Surfaces of Steel Rollers

115

Genkin, M. D., and Yu. A. Msharin. Method for Testing the Lubricating Capacity of Oils in a Gear Box

122

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7

GENKIN, M.D., kand.tekhn.nauk; MISHARIN, Yu.A., kand.tekhn.nauk; POROKHOV,
V.S., aspirant

Investigating the characteristics of changes in friction coefficients
in case of rolling with minor sliding. Izv.vys.ucheb.zav.; mashinostr.
no.1:63-68 '60. (MIRA 14:5)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Bauman
i Institut mashinovedeniya AN SSSR.
(Friction)

Genkin, M. D., and Misharin, Yu. A.

Proof of the Applicability of Block's Hypothesis on Critical Temperature to the Calculation of the Seizing of Gear Wheels

Sukhoie i granichnoye treniye. Friksionnyye materialy (Dry and Boundary Friction. Friction Materials) Moscow, Izd-vo AN SSSR, 1960. 302 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 2)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: I. V. Kragel'skiy, Doctor of Technical Sciences, Professor; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: S. G. Tikhomirova.

The collection published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya knoferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines, April 9-15, 1958).

S/179/60/000/03/032/039
E081/E441

AUTHORS: Genkin, M.D. and Porokhov, V.S. (Moscow)

TITLE: Investigation of the Nature of the Change in the
Friction Coefficient under Different Conditions of
Rolling of Lubricated Elastic Surfaces \\

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Mekhanika i mashinostroyeniye, 1960, Nr 3,
pp 168-170 (USSR)

ABSTRACT: The paper gives experimental results for pairs of
rollers (diameters $D_1 = 80$ mm, $D_2 = 120$ mm) made
from 3 kinds of steel: 12X2H4A (cementated, hardened,
tempered); 40X (hardened, tempered); and 38XMYUA (no
thermal treatment). The lubricant consisted of
50% MK8 + 50% MC20. Experiments were made in pure
rolling, rolling with small fixed slip (corresponding
to small values of $\alpha (= U/V)$, where U and V are
respectively the difference and sum of the circumferential
velocities) and frictional rolling (one of the rollers
was disconnected from its driving shaft and was rotated
by the frictional contact forces). Fig 1 shows the
dependence of friction coefficient $f (= \text{frictional}$
force/normal load) on α for technically pure rolling

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S/179/60/000/03/032/039
E081/E441

Investigation of the Nature of the Change in the Friction
Coefficient under Different Conditions of Rolling of Lubricated
Elastic Surfaces

and for different values of the velocity V (m/sec) at $T = 50^\circ\text{C}$. [Abstractor's note: σ is not defined in the paper; it is given in t/cm^2 , possibly tons/cm^2 .] Fig 2 shows the relation between f and α (V shown in m/sec on the curves; for curves 1 to 6, $\sigma = 7 \text{ t/cm}^2$; for curve 7, $\sigma = 56 \text{ t/cm}^2$; for curve 8, $\sigma = 4 \text{ t/cm}^2$; $T = 100$ for the first curve and $T = 50$ for the remainder). Fig 3 shows the dependence of friction coefficient f on σ and V (m/sec) in frictional rolling (steel 12X2H4A) for different values of σ (t/cm^2) at $T = 37^\circ$ and Fig 4 shows the dependence of f on V for different temperatures in frictional rolling (steel 12X2H4A) under load $\sigma = 5.6 \text{ t/cm}^2$. The data give information on the limits of the rolling regime of elastic bodies, improve some conceptions in the contact-hydrodynamical theory of lubrication and suggest some reasons for the variability of the friction coefficient in the contact zone. There are 4 figures

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S/179/60/000/03/032/039
E081/E441

Investigation of the Nature of the Change in the Friction
Coefficient under Different Conditions of Rolling of Lubricated
Elastic Surfaces

and 3 Soviet references.

ASSOCIATION: Institut mashinovedeniya, Akademii nauk SSSR
(Institute of Machine Practice, Academy of Sciences USSR) ✓

SUBMITTED: December 26, 1959

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OMNIKIN, M.D., kand.tekhn.nauk; MISHARIN, Yu.A., kand.tekhn.nauk

Straight-tooth involute gears with a higher-than-two engage-
ment factor. Vest.mash. 40 no.313-17 Mr '60.
(MIRA 13:6)

(Gearing, Spur)

S/122/60/000/005/002/017
A161/A130

AUTHORS: Genkin, M. D., Candidate of Technical Sciences; Forokhov, V. S.,
Engineer, and Misharin, Yu. A., Candidate of Technical Sciences

TITLE: Friction coefficients at "technically pure" rolling of lubricated
rollers

PERIODICAL: Vestnik mashinostroyeniya, ⁴⁰no. 5, 1960, 13-15

TEXT: The so-called pure rolling phenomenon in gear transmissions and ball
and roller bearings had been repeatedly treated theoretically but never verified
in experiments. It was the purpose of experiments described in this article to
produce technically pure rolling (for really pure is not possible practically
because of inavoidable contact deformation band), to examine the friction and to
determine the range of existence of the phenomenon. The experiment installation
was analogous with one described by N. P. Kuz'min (Ref. 4: O koeffitsiyente
treniya v tyazhelonagruzhenom kontakte, "Vestnik mashinostroyeniya", no. 5, 1954).
The specimens were case hardened, quenched and tempered steel rollers. The
temperature in one of the rollers was measured with a chromel-niopal thermocouple
connected close to contact spot, recorded with a potentiometer, and maintained at

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50, 75 and 100°C by electric heating of oil with different viscosity. The friction moment under different load was determined as relation of contact friction force to load on the rollers. The rollers (Fig. 1) were all made with same ± 0.01 mm tolerance but gave different friction moments in different combinations with each other, therefore, they were fitted separately by lapping until a minimum $\alpha = \frac{v_{vel}}{v}$ was reached (where v_{vel} is sliding velocity equal to the difference of the circumferential velocities of the rollers in relation to the contact line); α was calculated using the mean arithmetical value of dimensions given in Fig. 1. Taking into account the kinematic chain of the experiment machine,

$$\alpha = \frac{1.5 D_1 - D_2}{1.5 D_1 + D_2}$$

(where D_1 is the diameter of the smaller roller, and D_2 of the larger one). The α value varied between 0.0001 and 0.0034%. The experimental data show a very low friction factor at technically pure rolling (not above 0.008 at any temperature, velocity and pressure). It practically does not depend on temperature and its increase with stress is generally linear, the variations with varying summary rolling velocity fit the existing theoretical conceptions. A formula is derived for the friction factor calculation and recommended for practical use:

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$$f = k \frac{\sigma^{\beta}}{v^{\alpha}} \cdot \frac{1}{\rho_0^{0.5}}$$

where ρ_0 is the reduced curvity radius in cm,

$$\rho_0 = \frac{R_1 R_2}{R_1 + R_2}$$

The k factor at $v_r < 8$ m/sec may be assumed equal to $0.343 \cdot 10^{-5}$; at $v_r < 8$ m/sec $k = 0.379 \cdot 10^{-5}$; at $v_r > 25$ m/sec and $\sigma > 8,000$ kg/cm² $k = 0.591 \cdot 10^{-5}$. The formula is recommended explicitly for the parameters range indicated. It does not take into account the properties of oil and metal. Yet, in pure rolling these factors cannot have any considerable effect. The friction factors remained approximately constant in the range of α between 0.0001 and 0.0034%, but grew abruptly when α increased above this range. The friction factor increase is expressed practically with a straight line with an angle, and $\alpha = 0.003-0.004\%$ is the limit point of technically pure rolling. It is evident that the friction factor in pure rolling is much lower than in rolling with sliding. Machining accuracy considerably higher than 1st class is needed to produce technically pure rolling. A difference in rolling velocities exists practically always, and it

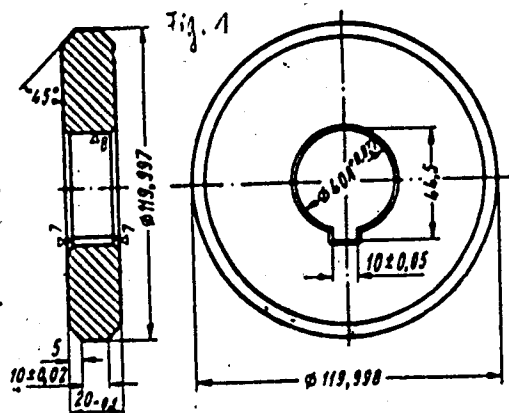
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already determines the friction factor. The effect of stress value in pure rolling is considerable, but in combined rolling and high sliding it was not stated. There are 5 figures, 1 table and 8 Soviet-bloc references.

Fig. 1:



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GENKIN, Mikhail Dmitriyevich; GRINKEVICH, Vladimir Kazimirovich; PINEGIN, S.V., doktor tekhn. nauk, prof., otv. red.; KLEBANOV, M.Ia., red. izd-va; RYLINA, Yu.V., tekhn. red.

[Dynamic loads on helical gears] Dinamicheskie nagruzki v peredachakh s kosozubymi kolesami. Moskva, Izd-vo Akad. nauk SSSR, 1961. 116 p. (MIRA 14:8)

(Gearing, Spiral)

18.8200

1808, 1413, 4016

26750
S/122/61/000/002/003/011
A161/A126

AUTHORS: Genkin, M. D., Candidate of Technical Sciences, Zakharov, V. N.,
Engineer, Misharin, Yu. A., Candidate of Technical Sciences.

TITLE: Some results of gear tests with hot lubricants.

PERIODICAL: Vestnik mashinostroyeniya, ⁴¹no. 2, 1961, 14 - 16

TEXT: Gears have been tested in a special test machine for 50 hours at 200°C lubricating oil temperature, and for seizure at 150 and 150°C. The article includes details such as the gear module, tooth numbers, contact factor, steel grade, hardness, etc. Oil was fed into contact area. Gears were rotated with 33.4 m/sec. velocity. The test results led to the conclusion that seizure presents the highest danger at high temperature. It appeared in 75 % of all tests as the first cause of wear. Pitting did not develop progressively. The phenomena proved a high effect of the heat balance in gears and a drop in mechanical strength in teeth surface as a result of tempering. Higher effect of tempering was stated on pinions than on the mating gears, due to smaller cooling surface and hence a higher temperature in pinions. It is expected that an oil feed in-

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Some results of gear test with hot lubricants.

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X

crease to a certain limit and oil cooling applied to the gear body will have a positive effect on the load capacity of transmissions at high temperatures. The load application mode was also stated to have some effect. Conclusions: 1) The most dangerous kind of destruction in gears working at 150 - 250°C is seizure. The mechanical strength and resistance to scoring of gears designed for such service must be evaluated taking into account the changing properties of oil and metal at high temperature. 2) The bending resistance of gears made of 18XH8A (18KhNVA) steel practically does not decrease at 150 - 250°C. 3) The metal strength in contact is dropping (due to reduced hardness and rising friction factor), but fatigue cracks mostly do not have time to develop into progressively growing cavities due to seizure. 4) The relative strength reserve for fatigue pitting and bending in hot gears is higher than that for seizure. This is particularly clear in short-life transmissions where contact stresses can normally be raised without expecting pitting from fatigue. There are 3 Soviet-bloc references.

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AYRAPETOV, E. L., inzh.; GENKIN, M. D., kand. tekhn. nauk;
RYZHOV, M. A., kand. tekhn. nauk

Effect of grinding burns on the fatigue strength of gears.
Vest. mashinostr. 42 no.10:70-72 0 '62. (MIRA 15:10)

(Grinding and polishing)

GENKIN, M.D., kand. tekhn. nauk, otv. red.; GORSHKOV, G.B., red.
izd-va; NOVICHKOVA, N.D., tekhn. red.

[Geometry and dynamics of gear transmissions] Voprosy geometrii i dinamiki zubchatykh peredach. Moskva, Izd-vo "Nauka," 1964. 134 p. (MIRA 17:4)

1. Moscow. Institut mashinovedeniya.

GENKIN, M.D., kand.tekhn.nauk; RYZHOV, N.M., inzh.

Means for reducing burns in grinding gear wheels. Vest.mashinestr.
41 no.7.64-67 J1 '64. (M. 11:9)

L 7048-66 ENT(m)/EWP(w)/ETC(m) WW/EM

ACC NR: AP5027721

SOURCE CODE: UR/0380/65/000/005/0055/0058

AUTHORS: Genkin, M. D. (Moscow); Yablonskiy, V. V. (Moscow)

ORG: none

TITLE: ²⁴ Vibration energy flow as a criterion for the vibroactivity of a mechanism

SOURCE: Mashinovedeniye, no. 5, 1965, 55-58

TOPIC TAGS: vibration, vibration measurement, energy theory, shock absorber

ABSTRACT: A vibration energy flow criterion is developed to analyze the vibration mechanism and spectra of different mechanisms. The model is shown schematically on Fig. 1. The time-averaged energy spectrum for the vibration is expressed by

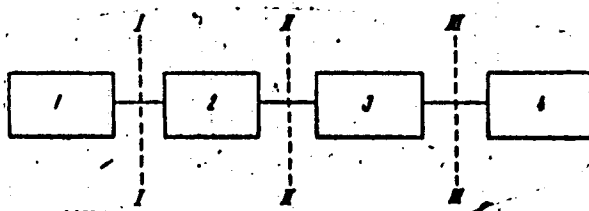


Fig. 1. System of mechanism-foundation-base: 1- mechanism; 2- intermediate support (bolts, shock absorbers); 3- foundation; 4- base

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